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CATALOG
1970-1971

# University of Scranton

# GRADUATE SCHOOL

Bulletin of the University of Scranton

Volume 55 JUNE, 1970 Number 3

# The Graduate School

M.A., M.S. and M.B.A. Degrees — Business Administration, English, Education, History, Physics, Chemistry

For Men and Women

## Scranton, Pennsylvania 18510
## Phone: (717) 347-3321

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*Pro Deo Et Universitate Award for Twenty Years or more of Service.

# UNIVERSITY OF SCRANTON
# GRADUATE SCHOOL

## CALENDAR FOR FALL—1970

September 8, 9.....Registration, Fall Semester
September 10.....Fall Semester Begins
September 19.....Final Day for Late registration and change of course
October 3 & 10.....Comprehensive and Candidacy Examinations
November 16.....Last day for submission of Graduate Thesis and Scholarly Paper (final draft)
November 26, 27, 28.....Thanksgiving Holidays
December 17-23.....Semester Examinations
December 23.....Semester Ends
January 18.....Registration, Spring Semester

## CALENDAR FOR SPRING—1971

January 18.....Spring Semester Begins
January 25.....Final Day for Late registration and change of course
February 15.....Washington's Birthday (no classes)
March 5 & 12.....Comprehensive and Candidacy Examinations
April 8-17.....Easter Holidays
April 19.....Classes resume
April 19.....Last day for submission of Graduate Thesis and Scholarly Paper (final draft)
May 4, 5.....Semester Examinations for those classes which meet Tuesday and Wednesday
May 10, 13, 15.....Semester Examinations for those classes which meet Monday, Thursday or Sat.
May 22.....Class Day and Baccalaureate Mass
May 23.....Commencement

## CALENDAR FOR SUMMER—1971

June 21.....Registration, Summer Semester
June 21.....Summer Semester begins
June 23.....Last Date for Late Registration
June 30.....Last Day for change of course
July 5.....Observation of Independence Day (no classes)
July 6.....Last day for submission of Graduate Thesis and Scholarly Paper (final draft)
July 9 & 16.....Comprehensive and Candidacy Examinations
July 30, 31.....Semester Examinations

## CALENDAR FOR FALL—1971

September 7, 8.....Registration, Fall Semester
September 9.....Fall Semester begins
September 18.....Final Day for Late registration and change of course
October 1 & 8.....Comprehensive and Candidacy Examinations
November 15.....Last day for submission of Graduate Thesis and Scholarly Paper (final draft)
November 25, 26, 27.....Thanksgiving Holidays
December 18-23.....Semester Examinations
December 23.....Semester Ends

# COLLEGE MISERICORDIA

## FALL 1970

September 8, 9.....Registration, Fall Semester
September 12.....Fall Semester begins
November 26, 27, 28.....Thanksgiving Holidays
December 19.....Semester Examinations
December 19.....Semester Ends

## SPRING 1971

January 18, 19.....Registration, Spring Semester
January 23.....Spring Semester begins
April 3.....Easter vacation
May 15.....Semester examinations

# University of Scranton
# The Graduate Faculty

HARRY B. STRICKLAND (1963- )
*Associate Professor of Business Administration (1968)*
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*Professor of Chemistry (1964)*
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*Associate Professor of History (1954)*
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*Dean of the Evening College (1963)*
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*Chairman Department of Chemistry (1950)*
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JOHN J. DUNSTONE (1966- )
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B.S., University of Scranton; M.S., Ph.D., University of Virginia

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RIAZ HUSSAIN (1967- )
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B.S., Forman College; M.S., University of Panjab;
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*Chairman, Department of Education and Psychology (1947)*
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# COLLEGE MISERICORDIA

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# COLLEGE MISERICORDIA

## FACULTY

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# GENERAL INFORMATION

The University of Scranton, the oldest Catholic institution of higher education in Northeastern Pennsylvania, was founded in 1888 as Saint Thomas College. It is chartered under the laws of the Commonwealth of Pennsylvania and empowered to confer Bachelor's and Master's degrees in the Arts, Sciences, Business Administration and Education. In 1938 Saint Thomas College became the University of Scranton, while four years later the Society of Jesus acquired title from the Catholic Diocese of Scranton and administrative control from the Brothers of the Christian Schools. Thus Scranton became the twenty-fourth of the twenty-eight Jesuit colleges and universities in the United States.

In 1950 graduate study in Education was initiated, the first Master's degree being awarded in June, 1952. Since that time more extensive programs were developed in Elementary Education, Psychology and Guidance, Educational Administration. Through courses at the University's Graduate School several State Certificates may be obtained. A graduate History program was first offered in 1955, while graduate curricula in English and in Business Administration are of 1960 origin. Graduate programs in Chemistry and Physics began in the Fall of 1967.

The University of Scranton Graduate School offers programs of study leading to the following degrees: Master of Business Administration; Master of Arts or Master of Science degree in English, American History and Politics, Chemistry and Physics. In addition a Master of Arts or a Master of Science degree program may be selected in any of the following areas: Elementary and Secondary Education, Elementary and Secondary School Administration, Counselor Education, Reading, Rehabilitation Counseling and Vocational Adjustment. A program of study can be developed by the student correlating a M.S. program in Secondary Education with English, History, Chemistry or Physics.

Students in the M.A. program in History and English have the option of a thesis or non-thesis program; those in the M.A. program in Education, Chemistry and Physics are required to complete a thesis.

## OBJECTIVES

As one of the family of world wide Jesuit Colleges and Universities, the University of Scranton shares with them a common educational heritage and tradition. Its principal objective, therefore, is: to lead the student to understand and to inspire him to fulfill that complex of dignities and responsibilities which Man is, as a person and as a member of human society, under God.

Specifically, as the university in this community, the University of Scranton labors to prepare its students to be thoughtful, active, effective citizens with a developed sense of leadership and a dedicated spirit of community service in the arts and professions.

More particularly, the Graduate School of this University aims 1) to communicate, interpret, intensify and integrate academic knowledge and relationships; 2) to develop professional attitudes, skills and competence in the student's chosen area of concentration; 3) to foster those value judgments so basic to human life and education—values which flow not only from a given discipline but also from Christian revelation and the Judaeo-Graeco-Roman, Western moral and intellectual tradition; 4) to promote research.

## ORGANIZATION AND LOCATION

The administration and supervision of the Graduate School is the responsibility of the Dean of the Graduate School. He is assisted by a Graduate Advisory Committee, of which he is chairman. All questions concerning admission, failure of candidacy and comprehensive examinations or modifications of course programs, will be submitted in writing to the Dean of the Graduate School. Decisions of the Dean of the Graduate School and his Advisory Committee are final.

Requests for admission, transcript, letters to draft boards and data concerning academic records should be made to the Graduate Office, University of Scranton.

The office of the Dean of the Graduate School is Room 310, St. Thomas Hall, Monroe & Linden Street. The office is open daily from 8:30 a.m. to 4:30 p.m. Monday through Friday. When classes are in session it is also open in the evenings and on Saturday mornings. FOR STUDENTS WHO WISH TO CONSULT THE DEAN THE COURTESY OF CALLING FOR AN APPOINTMENT IS RECOMMENDED.

There are three regular semesters of graduate courses: Fall, Spring and Summer. Fall and Spring graduate courses are taught each evening, except Friday, at Monroe & Linden Street from 7:00 to 9:00 P.M. and on Saturdays from 9:00 A.M. to 1:00 P.M. During the Summer term, graduate classes are scheduled Monday through Thursday for six weeks.

Graduate courses in the M.B.A. program are taught at O'Hara Hall, Linden St. and Jefferson Avenue.

Time schedules for each course appear in the special bulletins published three times each year for Fall, Spring and Summer programs.

## COLLEGE MISERICORDIA

According to a cooperative agreement for graduate programs, the University of Scranton Graduate School and College Misericordia, Dallas, Pa., will offer several courses during the Summer, Fall and Spring Semesters on the campus of College Misericordia. During the summer sessions, classes will be conducted on the same time schedule as the U. of S. During the Fall semester and the Spring term the classes will be scheduled on Saturdays from 9 A.M. to 1 P.M.

Application for admission to graduate study must be made to the University of Scranton. The faculty will be members of the cooperating schools. Credits are granted by the University of Scranton. Up to fifteen credits toward the M.A. or M.S. degrees may be acquired at College Misericordia while the remaining credits must be obtained at the University of Scranton. Charges at the cooperating schools are identical. So also are the candidacy and comprehensive examinations, course numbering, content and credits, curriculum and departmental requirements. Courses at both Scranton and Dallas are open to men and women.

## APPLICATIONS

All planning to enter the Graduate School should contact the Graduate Office for an application blank. Completed applications, together with transcripts of undergraduate and graduate work taken elsewhere, should be in the Graduate Office two months before the applicant begins graduate study. FOREIGN STUDENTS SHOULD ALLOW AT LEAST THREE MONTHS.

Admissions standards and policy of the University are free of discrimination on ground of race, color and national origin.

## ADMISSION STATUS

1. *Regular Admission.* Students admitted to graduate study after meeting the general requirements of the Graduate School and those of the Department in which they are to enroll. CLASSIFICATION: DEGREE STUDENT.

2. *Provisional Admission.* Students admitted to graduate study under this category must, in addition to meeting the regular requirements, satisfactorily complete additional conditions before they can be raised to Candidacy status. CLASSIFICATION: DEGREE STUDENT—PROVISIONAL.

3. *Probational Admission.* A student may be admitted on a probational basis under certain circumstances. If admitted, this means that upon completion of nine graduate credit hours, the credentials and the current work of the student are reviewed. At this point it is then determined whether or not the student will be allowed to continue

as a degree student. CLASSIFICATION: DEGREE STUDENT—PROBATIONAL.

4. *Special Student.* Students in this category are restricted to graduate study for the following purposes: certification only, transfer of credit, or self-improvement. Students so classified are not considered degree candidates unless the student presents his request to become a degree candidate in writing to the Graduate School and receives subsequently the approval of the Admissions Committee. CLASSIFICATION: SPECIAL STUDENT.

Admission to graduate study, under any cirmumstances, does not imply admission to candidacy for an advanced degree.

## REGISTRATION FOR COURSES

Registration for each semester will take place according to the schedules listed in the special bulletins which are issued prior to each semester. Mail registration is permitted after the initial acceptance and registration. Registration will be with the approval of a student's mentor or chairman of the department. A student may not drop or transfer from a course in which he is registered without the approval of his mentor and the Dean.

In order to facilitate registration for old and new students a period of pre-registration will be announced each semester. This will extend over a period of about 10 days and all graduate students taking courses during the current semester should register between the announced dates. Those who do not register and have an insufficient excuse will be charged a late registration fee of $15.

The University reserves the right to withdraw a course from its schedule in which less than ten students have been registered.

Undergraduate students may register for certain graduate courses. However, it is required that they have approval of the appropriate Department Chairman and the permission of the Dean.

## CANDIDACY

The student is not considered a candidate for a degree until he fulfills the following requirements:

1. Completes successfully at least nine semester hours of course credit at the University of Scranton.

2. Files a formal application for degree candidacy with the Dean.

3. Is approved by the department in the field of his major concentration according to departmental norms.

From the inception of graduate study, he will be assigned a mentor to help him formulate a program of studies and supervise his work. It is suggested that students work closely with their mentors and that

the courtesy of arranging appointments in advance with faculty members so designated be observed by all students.

## GRADES

Achievement of Graduate Students is recorded as *A—excellent; B+—superior; B—good; C—fair but passing; F—failure.* To insure qualitative standards a student incurring 4 "C"s or 3 "C"s and an "F" ceases to be a candidate for a degree but may continue to take courses for information, self-improvement or credit. A student who fails any two courses will be automatically dismissed and so notified by mail.

Papers, reports and assignments should be rendered promptly, and permission of the professor is required for deferral of such work. Given an extension, the student should submit all required work no later than one month after the end of the semester. Failure to complete the work within the stipulated time results in automatic conversion of the "Incomplete" to failure (F).

Regular attendance at class is considered a requisite for successful completion of a course.

## TIME LIMIT

All graduate work including the thesis must be completed within six consecutive years. Time spent in the armed forces is not included in the six year period. Extension of this time restriction may be granted for valid reasons at the discretion of the Dean.

## INSTITUTES

From time to time the University conducts special programs for teachers-in-service. Graduate or undergraduate credit may be gained by successful work in the programs, but in the case of the graduate student, no more than twelve credits of the advanced degree work may be earned in the institutes.

## TRANSFER OF CREDITS

After a student has acquired candidacy status he may request that approved graduate work previously completed at other institutions be accepted as partial fulfillment of graduate course requirements here. This will be granted only under the following conditions:

1. That such credits were acquired in residence at the other institution. Extension credits are not acceptable.
2. That only six (6) credits maximum be transferred.
3. That courses to be transferred parallel courses here and mesh with the student's program at the University of Scranton.
4. That these credits were taken within six (6) years of the student's admission.

5. That a grade of B or better was acquired in these courses and that an official transcript is submitted for work at other institutions, including the course description of the credits in question.

Students matriculated at the University of Scranton may follow courses at other approved graduate schools, and transfer credits only with the previous permission of their mentor and the Dean of the Graduate School.

## COMPREHENSIVE EXAMINATIONS

Before a Master's degree is awarded, the candidate must pass a comprehensive examination in his graduate course work. This examination may be either oral, written or both. Eligibility for admission to the examination is determined by the student's mentor with the approval of the Department Committee. This examination will be given only on the dates published in the Graduate Catalogue. Application forms are obtainable at the Graduate Office. Completed forms are then filed with the Graduate Office.

Several weeks before the examination date, the candidate should consult his mentor for a general explanation of the topics to be covered in the examination and file an application for the examination.

Candidates failing the comprehensive examination for the second time will not be considered for the advanced degree.

The results of the comprehensive examination will be forwarded to the candidate by mail.

## THESIS

Candidates for the Master of Arts degree in Education, English, History, Physics or Chemistry must present a thesis, completed under the active supervision of the candidate's mentor and approved by one additional reader. In case of doubt, a third reader may be required. In the preparation of the thesis, style regulations prescribed by the Graduate School will be observed. Two copies of the accepted thesis must be submitted to the Graduate School of the University of Scranton on or before the date indicated in the University Calendar.

## SUMMARY

The following procedures are to be followed by students working for the advanced degree:

1) File an application for admission to graduate study, official transcripts of undergraduate preparation and of graduate credits taken elsewhere, and supporting recommendations.

2) Meet with the mentor to organize a program of studies in the major course concentration selected. Confirm the program at each registration period.

3) Apply for candidacy for the degree by fulfilling requirements.
4) Complete core, specific major and elective courses.
5) Complete the required thesis if applicable.
6) Successfully pass the required comprehensive examination.
7) Make formal application to the Graduate office for the degree.

## ALUMNI MEMORIAL LIBRARY

The library is located on the Scranton Estate. It contains more than 123,000 bound volumes, with over 850 literary, scientific and professional periodicals currently received. Microfilm, micro fische, and micro card reading equipment is available, as well as, inter-library loan.

The library is open daily during the Fall and Spring Semesters from 8:30 A.M. to 11:00 P.M., Monday to Thursday; 8:30 A.M. to 5.00 P.M. on Friday; 9:00 A.M. to 5:00 P.M. on Saturday. During the Summer Semester the hours are the same with the exception of a 9:00 A.M. opening hour each day. The library is open on Sundays from 3:00 to 9:00 P.M.

## COUNSELING AND PLACEMENT

The University's counseling, financial aid and placement services are available to graduate students. The Counseling Center is located in St. Thomas Hall, Room 401; Placement Office in Room 402, the Financial Aid Office in 106. All offices are open on weekdays from 8:30 A.M. to 4:30 P.M. and at other times only by appointment.

In addition, there is an Advanced Study Office to serve students anticipating further graduate work, and for foreign students an Inter-National Student Advisor is available.

## FINANCIAL AID

Graduate teaching assistantships are available in each department offering graduate programs. Departments also award fellowships and assistantships to graduate students who aid in a variety of departmental duties, including assisting in faculty research. Traineeships are available for those students in the Rehabilitation Counseling program; aid is also provided for those enrolled in the Vocational Adjustment program through the Professional Education Program of the State of Pennsylvania. Information and application forms for the assistantships, fellowships, and traineeships may be obtained from the Dean of the Graduate School.

Resident assistantships are offered to single male graduate students, providing room and board in the university's dormitories. Applications may be secured from the Student Personnel Office.

In addition, loan programs for graduate students and a number of campus jobs through the Work-Study program are offered. Inquiries regarding loan and Work-Study programs should be directed to the Financial Aid Office.

## CAMPUS HOUSING

Limited housing is offered for single male graduate students in the ten modern university dormitories. Room and board for one semester on the two-meal plan is $455.00 and on the three-meal plan is $515.00. Assistance is provided in locating suitable housing for men and women who prefer to reside off-campus.

## PHYSICAL EDUCATION CENTER

The use of the John J. Long Center is provided for graduate students at a cost of $7.00 per semester. Facilities are provided in the physical education building, for all indoor sports such as basketball, handball, weight lifting. A physical therapy room and sauna bath are also housed in the structure.

## COMPUTING CENTER

The IBM Data Acquisition and Control System, located in the Computing Center, is available for use by graduate students conducting research and programming functions in this area.

## HONOR SOCIETIES

Chapter organizations of several national honor societies are maintained at the University of Scranton campus. Graduate students can be selected for membership in the following: Alpha Sigma Nu, international Jesuit honor society; Phi Alpha Theta, national honor society in history; Delta Mu Delta, business administration honor society; Sigma Pi Sigma, physics honor society and Omicron Delta Epsilon, national honor society in economics. Contact the chapter officers for further information regarding membership.

## EXPENSES

### GRADUATE SCHOOL

| | |
|---|---|
| Tuition (per semester hour of credit) | $53.00 |
| *Fees* — | |
| Admission Fee | 10.00 |
| Library Fee (per semester) | 5.00 |
| Science Lab Fee | 25.00 |
| Late Registration | 15.00 |
| Audio-Visual Aids Fee | 5.00 |
| Binding of Thesis | 15.00 |
| Graduation Fee | 30.00 |

Unless explicitly stated otherwise, tuition and fees are for one semester and are payable at registration.

Students will not be permitted to receive any degree, certificate, or transcript of record until his financial accounts with the University have been satisfactorily settled.

## REFUNDS

No refunds may be demanded as a matter of right when a student leaves the University without completing the semester in which he was engaged. If, however, his withdrawal is authorized by the Dean for a good cause and if he is entitled to an honorable dismissal, he may request in writing a refund of tuition. Fees are not refundable.

The following refund scheduled will be applied to approved cases:

| *Date of Notification of Dean* | *Refund* |
|---|---|
| Fall Semester 1970 | |
| To September 16 | 80% |
| To September 23 | 60% |
| To September 30 | 40% |
| To October 7 | 20% |
| Beyond October 7 | no refund |
| Spring Semester 1971 | |
| To January 23 | 80% |
| To January 30 | 60% |
| To February 6 | 40% |
| To February 13 | 20% |
| Beyond February 13 | no refund |
| Summer Semester 1971 | |
| End of First Week | 80% |
| End of Second Week | 40% |
| Beyond Saturday Second Week | no refund |
| Fall Semester 1971 | |
| To September 15 | 80% |
| To September 22 | 60% |
| To September 29 | 40% |
| To October 6 | 20% |
| Beyond October 6 | no refund |

## DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Dr. Lawrence J. Lennon, Chairman

### DEPARTMENTAL REQUIREMENTS

The applicant for admission must possess the baccalaureate degree from an accredited college or university and provide the Departmental Committee on Admissions with evidence of satisfactory undergraduate preparation. This is interpreted to mean graduation in the upper three-fifths of the class.

The Admission Committee will also consider the academic and personal traits of each applicant in relation to his potential for satisfactory achievement in graduate study.

With the exception of rehabilitation counseling and counselor-education majors, the applicant will have completed the ordinary state requirements for certification as a teacher; of those seeking a masters' degree, a B average in undergraduate Education courses is expected. If undergraduate course preparation in Education or the general or liberal studies is deficient as determined by the Admissions Committee, the student will correct the deficiency before he applies for candidacy for the advanced degree.

Specific requirements for entrance into certain major concentrations are in addition to the admissions requirements to graduate study in Education at the University. These are described in the sections on Course Concentrations.

### CANDIDACY

Before a student can request candidacy for the advanced degree he will successfully pass Education 202 Research and Literature and certain core courses in his major concentration. A grade of B is required.

It is the responsibility of the student to fulfill all candidacy requirements. His acceptance as a graduate student in a given major requires that he fulfill the following requirements:

1. File a formal application for candidacy with the Dean of the the Graduate School.
2. Pass all core courses with a mark of B in each course. He will only be allowed to repeat any course once.
3. Is approved by the Department in the field of his major concentration according to Departmental norms.

### THE MASTER OF ARTS DEGREE

Thirty semester hours credit are needed for the M.A. degree. Nine of these will be in Education 202, 205, 206 or 207. Of the remain-

ing twenty-one, three credits are allowed for the successful completion of a thesis, a requirement of the Master of Arts degree.

At the time of candidacy for the degree, the candidate's mentor, in co-operation with the student will plan a program of studies which together with the thesis, will provide a sound treatment of some area of interest. As a result of intensive work in this area, his study should be marked by sound mastery and technical accuracy. The M.A. program may entail requirements prescribed by the mentor, including those essential courses consistent with sound scholarship. The mentor's judgment in this matter is final.

The thesis required for the M.A. degree may be a research paper of suitable dimensions, a critical report of certain procedures or sectors of knowledge, or a scholarly biographical work on the Master's level.

The student with the permission of the mentor will register for a seminar while working on his thesis.

## THE MASTER OF SCIENCE DEGREE

Thirty semester hours or more of course credit are usually required for the M.S. degree. In the Rehabilitation Counseling program, however, fifty-seven graduate credits are necessary. For the M.S. there is no thesis requirement, but a scholarly paper must be presented to the mentor 60 days before graduation. The student may seek the Master of Science degree in any one of the concentrations indicated hereafter.

Before registration the graduate student will meet with his advisor for the selection of a concentration of courses, and the approval of his program of studies. Should the candidate select Plan A, Elementary Education, or Secondary Education, one-half of the program of studies will be in secondary or elementary education and the remainder in a teaching field.

While the candidate's courses within the concentration may possess flexibility, certain essential courses are required. The advisor may make substitutions in order to round out a sound program of courses, and in this matter his judgment is final.

## THE COMPREHENSIVE EXAMINATION

A comprehensive examination as prescribed by the student's mentor is required of all candidates for a degree in education.

# MAJOR COURSE CONCENTRATIONS

## SECONDARY EDUCATION

Prof. Matthew C. Farrell, Direcor of Graduate Program

*Objective*: To prepare the secondary school teacher in-service for more effective instruction of students.

| *Core Courses (Required for Candidacy)* | | *Semester Hours* |
|---|---|---|
| Education 202 | Educational Research and Literature | 3 |
| Education 205 | Historical and Philosophical Bases of Education I | 3 |
| Education 233 | Curriculum Theory & Development | 3 |

*Other Required courses*:

| | | |
|---|---|---|
| Education 206 | Historical and Philosophical Bases of Education II (or) | 3 |
| Education 207 | Sociology of Education | 3 |
| Education 234 | Improvement of Instruction in the Secondary School | 3 |
| Education 272 | Human Development and Learning | 3 |

*Electives*:

English, History, Chemistry or Physics courses 15 hours.
The graduate student who selects English will include English 221, 237, 243 and English 259. Students interested in other subjects will schedule either History 237, Teaching of History and Social Studies, Chemistry 237, Teaching of Chemistry or Physics 237, Teaching of Physics. These same courses may also be scheduled as Education237.

Total 33

# COUNSELOR EDUCATION

Dr. James J. Cunningham, Director of Graduate Program

*Objectives*: The preparation of secondary school counselors.

*Certification as a School Counselor*: Students who desire to apply for the Pennsylvania school counselor's certificate must follow the certificate sequence as approved by his advisor.

Only students of proven competency who have successfully completed the certificate sequence will be endorsed for certification by the University.

Students who are not interested in secondary-school counseling may substitute certain other courses directed toward other objectives. Course selection will be made in conference with the student's advisor.

*Major Concentration Entrance Requirements*:

These requirements for entrance into the Counselor Education major are in addition to the entrance requirements of the Graduate School:

(1) Recommendations of three persons capable of evaluating the candidate's personal qualities as well as academic potential,
(2) A written, self-estimate of the candidate's qualifications for the job of the counselor.
(3) A personal interview.

| *Core Courses for Candidacy*: | | *Semester Hours* |
|---|---|---|
| Education 202 | Research and Literature | 3 |
| Education 240 | Foundations of Guidance | 3 |
| Education 241 | Group Methods in Counseling | 3 |

*Other Required Courses*

| | | *Semester Hours* |
|---|---|---|
| Education 242 | Counseling Interview Techniques | 3 |
| Education 243 | Seminar: Current Issues in Counseling | 3 |
| Education 244.1 | Supervised Counseling Experience | 2 |
| Education 244.2 | Supervised Counseling Experience | 2 |
| Education 246 | Occupational Educational and Social Information | 3 |
| Education 253 | Evaluation and Appraisal I | 3 |
| Education 254 | Evaluation and Appraisal II | 3 |
| Education 274 | Developmental Psychology | 3 |
| Education 275 | Psychology of Adjustment | 3 |
| | Total | 34 |

## ELECTIVES

| | | | |
|---|---|---|---|
| Education | 306 | The Study of Special Groups | 3 |
| Education | 207 | The Sociology of Education | 3 |
| Education | 251 | Statistics | 3 |
| Sociology | 404 | Cultural Anthropology | 3 |
| Sociology | 406 | Community Organization | 3 |
| Sociology | 413 | Juvenile Delinquency | 3 |
| Sociology | 411 | Urban Sociology | 3 |
| Sociology | 414 | American Minority Groups | 3 |

*Master's Degree*:

Thirty-four semestser hours of credit are required for the Master's degree.

# ELEMENTARY EDUCATION

Dr. Michael Marino, Director of Graduate Program

*Objective*: To prepare the elementary school teacher in-service for more effective instruction of students, and to help him acquire the skills and values to become a self-renewing teacher.

| *Core Courses*: *(Required for Candidacy)* | | *Semester Hours* | |
|---|---|---|---|
| Education 202 | Educational Research and Literature | 3 | 3 |
| Education 205 | Historical and Philosophical Bases of Education I | 3 | 3 |
| Education 230 | Elementary School Curriculum | 3 | 3 |
| *Other Required Courses*: | | | |
| Education 206 | Historical and Philosophical Bases of Education II (or) | 3 | 3 |
| Education 207 | Sociology of Education | 3 | 3 |
| Education 231 | Improving Instruction in the Elementary School | 3 | 3 |
| Education 272 | Human Development and Learning | 3 | 3 |
| *Plan A* | | | |
| | English, History, Chemistry or Physics courses | | 12 |
| *Plan B* | | | |
| | In consultation with his mentor the graduate student will | | |
| | Select 12 semester hours in Elementary Education | 12 | |
| | Total | 30 | 30 |

# ADMINISTRATION

## (Elementary and Secondary)

Dr. Paul R. Getts, Director of Graduate Program

*Objectives*: The preparation of elementary and secondary school principals.

*Major Concentration Entrance Requirements*:

These requirements for entrance into the Administrative major are in addition to the entrance requirements of the Graduate School:

(1) Recommendations of three persons capable of evaluating the candidate's personal qualities as well as academic potential.
(2) A written self-estimate of the candidate's qualifications for the position of principal.
(3) A personal interview.

*Core Courses for Candidacy*:

Education 202 Research and Literature
Education 205 Historical & Philosophical Foundations I
Education 221 Educational Administration

*The Master's Degree*:

A student will be recommended for a Master of Science degree in School Administration when he has satisfactorily completed the seven courses required in Phase I and Phase II, four courses from Phase III and IV as approved by his mentor, passed a Comprehensive Examination in School Administration, and filed an approved scholarly paper sixty days prior to graduation.

*Certification as a Principal*:

An applicant will be endorsed by the University of Scranton as a Secondary School Principal upon completion of five courses or fifteen credits of graduate work to include Ed. 225, Ed. 235, and three courses or nine credits from Phases III and IV.

An applicant will be endorsed by the University of Scranton as an Elementary School Principal upon completion of five courses or fifteen credits of graduate work to include Ed. 223, Ed. 232, and three courses or nine credits from Phases III and IV of the Program of Studies for School Administration.

A master's degree in Administration is required for either or both certificates.

*Phase I - Four Courses - Ed. 202, Ed. 205 and Ed. 221 required.*

Ed. 202 Educational Research and Literature
Ed. 205 Historical & Philosophcal Foundations of Education I
Ed. 206 Historical & Philosophical Foundations of Education II
Ed. 207 Sociology of Education
Ed. 221 Educational Administration

*Phase II - Three Courses - Ed. 233 required.*

Ed. 223 The Elementary School Principal as Administrator
Ed. 225 The Secondary School Principal as Administrator
Ed. 232 The Elementary School Principal as Supervisor
Ed. 233 Curriculum Development and Theory
Ed. 235 The Secondary School Principal as Supervisor

*Phase III - Three Courses - elective*

Bus. 244 Labor Management Problems
Bus. 246 Management of Human Resources
Ed. 240 Foundations of Guidance
Ed. 241 Group Processes
Hist. 208 - 209 The American Heritage
Hist. 212 - 213 Development of American Civilization

Pol. Sci. 407 - Public Administration
Soc. 406 - Community Organization
Soc. 411 - Urban Sociology
Soc. 414 - American Minority Groups

*Maximum of two courses from this group.*

*Phase IV - Five Courses - elective.*

Ed. 222.1 Problems in School Administration & Supervision
Ed. 222.2 Public Relations for School Principals
Ed. 222.3 Personal Management for School Principals
Ed. 222.4 School Finance Problems for the School Principal
Ed. 222.5 School Plant Management for the School Principal
Ed. 222.6 School & Community Relations for the School Principal
Ed. 222.7 Practicum in School Administration

# READING

Sister Alice Louise Davis, R.S.M., Director of Graduate Program

*Objectives*: To prepare reading specialists and reading supervisors.

Courses in this major are also of value to teachers at the elementary level.

*Core Courses for Candidacy*:

Education 202 Research and Literature
Education 291 Foundations of Reading Instruction
Education 292 Prevention & Detection of Reading Difficulties (or)
Education 295 Reading in the Content Areas

## CERTIFICATION PROGRAMS IN READING

Students who desire a recommendation from the University of Scranton for certification in Reading must meet the following requirements:

*Reading Specialist*:

Admission to the Graduate School and the satisfactory completion of a minimum of 12 semester hours of study in Reading and three hours in Measurements.

Education 291 Foundations of Reading Instruction
Education 292 Prevention and Detection of Reading Disabilities
Education 293 Diagnosis of Reading Disabilities
Classroom Techniques
Education 294 Internship - Classroom Approaches
and
Education 251 Educational Statistics
(or)
Education 253 Evaluation & Appraisal I

*Reading Supervisor*:

Admission to the Graduate School and the satisfactory completion of and/or demonstration of competencies in areas of Reading in the Master's sequence; certification as a Reading Specialist; and completion of Education 297 Administration and Supervision of a Reading Program and Education 298 Clinical Approaches to Reading.

*Master's Degree*:

Thirty semester hours of credit are required for the Master's degree in Reading:

| | *Courses* | *Semester Hours* |
|---|---|---|
| Education 202 | Research and Literature | 3 |
| Education 251 | Education Statistics (or) | 3 |
| Education 253 | Evaluation and Appraisal I | 3 |
| Education 262 | Theories of Learning | 3 |
| Education 272 | Human Development and Learning | 3 |
| Education 291 | Foundations of Reading Instruction | 3 |
| Education 292 | Prevention and Detection of Reading Disabilities | 3 |
| Education 293 | Diagnosis of Reading Disabilities—Classroom Techniques | 3 |
| Education 294 | Internship - Classroom Approaches | 3 |
| Education 295 | Reading in the Content Areas | 3 |
| Education 296 | Organization and Operation of Reading Programs | 3 |
| Education 297 | Administration and Supervision of Reading Programs | 3 |
| Education 298 | Clinical Approaches to Reading | 3 |
| Education 299 | Independent Study in Reading | Variable |

# REHABILITATION COUNSELING

Dr. Joseph A. Szuhay, Director of Graduate Program

*Objective*: The preparation of rehabilitation counselors and related professional personnel.

*Core Courses for Candidacy*:

Education 202 Research and Literature and three Education courses in the three-hundred series.

| | | |
|---|---|---|
| Education 253 | Evaluation and Appraisal I | 3 |
| Rehabilitation Counseling 301 | Introduction to Rehabilitation Services | 3 |

| *Fall* | *Courses* | *Semester Hours* |
|---|---|---|
| Rehabilitation Counseling 306 | Study of Special Groups | 3 |
| Rehabilitation Counseling 308 | Guided Field Work in Rehabilitation | 3 |
| | Elective | 3 |
| | | 15 |

| *Spring* | | |
|---|---|---|
| Education 202 | Research and Literature | 3 |
| Education 242 | Counseling Interview Techniques | 3 |
| Education 246 | Occupational Educational & Social Information | 3 |
| Education 254 | Evaluation & Appraisal II | 3 |
| Rehabilitation Counseling 302 | Rehabilitation Counseling | 3 |
| | | 15 |

| *Fall* | | |
|---|---|---|
| Education 263 | Contemporary Theories of Personality | 3 |
| Rehabilitation Counseling 303 | Psycho-Social Aspects of Disability | 3 |
| Rehabilitation Counseling 304 | Medical Aspects of Disability | 3 |
| Rehabilitation Counseling 305 | Vocational Evaluation of Rehabilitation | 3 |
| Rehabilitation Counseling 309 | Practicum in Rehabilitation Counseling | 3 |
| | | 15 |

| *Spring* | | |
|---|---|---|
| Rehabilitation Counseling 310 | Internship in Rehabilitation Counseling | 12 |

# VOCATIONAL ADJUSTMENT

Dr. Joseph A. Szuhay, Director of Graduate Program

*Objective*: The preparation of personnel for the field of vocational adjustment services.

| *Fall* | *Courses* | *Semester Hours* |
|---|---|---|
| Rehabilitation Counseling 301 | Introduction to Rehabilitation | 3 |
| Rehabilitation Counseling 306 | Study of Special Groups | 3 |
| Rehabilitation Counseling 308 | Guided Field Work in Rehabilitation | 3 |
| Education 253 | Evaluation and Appraisal I | 3 |
| Education 262 | Learning Theories | 3 |
| | | 15 |
| *Spring* | | |
| Education 242 | Counseling Theory & Technique | 3 |
| Education 246 | Occupational, Educational & Social Information | 3 |
| Education 254 | Evaluation and Appraisal II | 3 |
| Education 202 | Educational & Psychological Research | 3 |
| Vocational Adjustment 311 | Human Dynamics | 3 |
| | | 15 |
| *Fall* | | |
| Rehabilitation Counseling 303 | Psycho-Social Aspects of Disability | 3 |
| Rehabilitation Counseling 305 | Vocational Evaluation of Rehabilitation | 3 |
| Vocational Adjustment 313 | Psycho-Social Conditions | 3 |
| Vocational Adjustment 312 | Group Processes | 3 |
| Rehabilitation Counseling 309 | Rehabilitation Counseling Practicum | 3 |
| | | 15 |
| *Spring* | | |
| Vocational Adjustment 314 | Internship in Vocational Adjustment | 12 |

# COURSE DESCRIPTIONS

## FOUNDATIONS OF EDUCATION

Education 202. *Educational Research and Literature* *3 credits*

This is a basic course concerned with the nature of research problems. Predictive studies, surveys and experimental designs are treated with the objectives of critical appraisal by the student and as a help to him in initiating his research project, which is to be developed with his faculty advisor.

Education 205. *Philosophical and Historical Bases of Education I* *3 credits*

This course considers in the tradition of philosophy the fundamental problems of the nature of man, the child, the parent, the school, and society. The aims of education in society and their consequences in rights and duties are the most salient problems.

Education 206. *Philosophical and Historical Bases of Education II* *3 credits*

The second course studies the history of education formally. After a brief overview of the classical, patristic, and medieval periods, major attention is given to education in the twentieth century, especially in the United States.

Education 207. *The Sociology of Education* *3 credits*

The sociology of education is oriented toward understanding the social influences on learning. The socialization of the child, social structure in American society, social mobility, the school as an agency of socialization, social problems especially germane to the school such as delinquency, population and racial integration, the social role of the teacher, the school and its sociological environment will be the areas of special concern.

## ADMINISTRATION

Education 221 - *Educational Administration* *3 credits*

A foundations course in general school administration, involving philosophical bases, organization in a democratic society, administration of instruction and personnel. Required of all students beginning a major in educational administration and a prerequisite for other courses in educational administration.

Education 222.1 - *Problems in School Administration and Supervision* *3 credits*

A seminar course for those seeking elementary and secondary school principal's certification. Emphasis is placed upon intensive investigation of selected problem in administration and supervision. (Prerequisites: Ed. 223 and 232 or Ed. 221 and 325).

Education 222.2 - *Public Relations for School Principals* *3 credits*

An introduction to school public relations. Emphasis is focused upon the principal's role in establishing contact between schools and the general public through the use of mass media.

Education 222.3 - *Personal Management for School Principals* *3 credits*

An overview of the principal's role in the establishment and performance of personnel policies as they relate to recruitment, selection, orientation, deployment, promotion, evaluation, in-service development, morale, dismissal, and teacher-principal relationships. Admission with consent of instructor.

Education 222.4 - *School Finance Problems for the School Principal* *3 credits*

An introduction to public school finance as it relates to the school principal. Emphasis is focused upon the principal's role and responsibilities in handling student funds, district budgeting and accounting, and modern planning - programming - budgetary systems. Admission with consent of instructor.

Education 222.5 - *School Plant Management for the School Principal* *3 credits*

A study of problems involved in the planning, operation, and maintenance of school plant facilities. Emphasis is upon efficient use of existing plant facilities and their possible adaptations to meet modern educational and community needs. Admission with consent of instructor.

Education 222.6 - *School and Community Relations for the School Principal* *3 credits*

A study of the relationship of the school to the community. Emphasis is focused upon the school-community concept, community analysis, community characteristics affecting quality education, and public participation in education planning. Admission with consent of instructor.

Education 222.7 - *Practicum in School Administration* *3 credits*

The purpose of this course is to give the student practical experience in administrative work. A minimum of sixty clock hours in one semester must be spent on this work. Work is done under supervision in a local school system according to a definite schedule approved by the instructor and the administrator of the school system involved. Admission by special arrangement.

Education 223 - *The Elementary School Principal as Administrator* *3 credits*

A technical course emphasizing the administrative duties and responsibilities of the elementary school principal. Attention is focused on types of organization, purogram, studies, pupil progress, teaching staff, plant and equipment, and community relationships. (Prerequisite: Ed. 221)

Education 225 - *The Secondary School Principal as Administrator* *3 credits*

A technical course emphasizing the administrative duties and responsibilities of the secondary school principal. Attention is focused on problems of organization, program of studies, pupil personnel, teaching staff, plant and equipment, and community relationships. (Prerequisite: Education 221)

## CURRICULUM, INSTRUCTION & SUPERVISION

Education 230 - *The Elementary School Curriculum* *3 credits*
An investigation of curriculum theory as applied to classroom practice. Students will have an opportunity for serious study of the basic considerations necessary in providing a meaningful teaching-learning environment for children in a changing world.

Education 231 - *Improving Instruction in the Elementary School* *3 credits*
Students will study a wide spectrum of evaluative devices and techniques which are necessary for a comprehensive evaluation of all the objectivs of elementary education. Emphasis will be on how to apply the strategies of evaluation in the classroom to improve the curriculum of children.

Education 232 - *The Elementary School Principal as Supervisor* *3 credits*
Methods and techniques in the supervision of the elementary school with the objective of improvement of teaching and learning in terms of modern objectives and methods.

Education 233 - *Curriculum Development and Theory* *3 credits*
Principles of curriculum construction which underlie the reorganization of the program of studies for elementary and secondary schools, sources of the curriculum, methods of organization, structure of knowledge, and curriculum planning and development.

Education 234 - *Improving Instruction in the Secondary School* *3 credits*
Secondary general methods with emphasis on current procedures, theories and practices. Such topics as classroom atmosphere, teacher-pupil behavior patterns, teaching skills, pupil-teacher planning, inquiry, communication, logic in teaching and teaching the process of learning. Other topics will be introduced as interest of the group and time allows.

Education 235 - *The Secondary School Principal as Supervisor* *3 credits*
A technical course emphasizing the duties and responsibilities of the secondary school principal in the role of a supervisor of instruction. Attention is focused upon methods and techniques of supervision with the objective of improvement of teaching and learning in terms of modern objectives and methods.

Education 236 - *Audio - Visual Aids in Education* *2 credits*
Graphic materials and pictures that can be used in teaching are studied. Picture projection is studied as a regular classroom procedure and objective tests are constructed based upon educational films. Other visual aids stressed include school journeys, object-specimens, models, charts, graphs, diagrams, T.V., maps. Students in the course will be required to complete successfully a prescribed project. This course is required for permanent certification in Pennsylvania. Laboratory fee $5.00.

Education 237.1 - *Teaching of History and Social Science* *3 credits*

A consideration of the objectives of social studies, organizing the subject matter, textual and non-textual materials, the social studies curriculum, outcomes and their evaluation.

Education 237.2 - *Teaching of English Literary Types in Secondary Schools* *3 credits*

Narrative and lyric poetry types, prose types, and drama. Techniques of methodology and organizational patterns are suggested. Listed under Education courses, this offering is taught by the Department of English as English 238.

Education 280 - *Workshop in Elementary Education* *3 credits*

Students will have the opportunity to develop and test innovative curriculum materials and strategies with special emphasis on models for individualizing instruction. (Prerequisites: Educ. 202, 205, 206, 231).

Education 280.1 - *Research in Elementary Education* *variable*

Students will have an opportunity to design and carry out research studies pertinent to elementary education. This course is limited to students interested in doing publishable research and have completed the core courses, Education 231 and one seminar.

Education 283 - *Children's Literature for the Elementary School* *3 credits*

Literature for children from kindergarten through the elementary school years. Children's literary needs and interests will be emphasized.

Education 284.1 - *Seminar in the Communicative Arts: Listening, Speaking, and Reading* *3 credits*

Relationships and issues involving listening, speaking, and reading in the elementary school. An opportunity for students to set up and to work on action research projects arising from problems of their elementary teaching and/or elementary supervisory-administrative experiences.

Education 284.2 - *Seminar in the Communicative Arts: Writing* *3 credits*

Relationships and issues involved in the writing process, such as linguistics, spelling, the mechanics of writing and creative writing in the elementary school. An opportunity for students to set up and to work on action research projects arising from problems of their elementary teaching and/or elementary supervisory-administrative experiences.

Education 285 - *Seminar in Language Arts* *3 credits*

A critical analysis of the research and issues of the inter-relationships of the language arts in the elementary school. An opportunity for students to concentrate on the interrelationships of the language arts in the elementary school and prepare a scholarly research paper for possible publication. (Prerequisite: Education 202, 205, 206, 230, 231 and one seminar or by permission of the instructor.)

Education 286.1 - *Seminar in Elementary School Mathematics* *3 credits*

Selected topics and problems in teaching modern mathematics in the elementary school with particular emphasis on individual and small group projects.

Education 287.1 - *Seminar in Elementary School Social Studies* *3 credits*

Selected topics, problems, and recent developments in the teaching of social studies in the elementary school with particular emphasis on individual and small group projects.

Education 288.1 - *Seminar in Elementary School Science* *3 credits*

Analysis of selected topics and problems in teaching and learning science in the elementary school with particular emphasis on individual and small group projects.

## RESEARCH

Education 290 - *Research Seminar* *Variable*

Designed for students who are working on their thesis or other directed research projects. Registration is only with permission of the student's advisor and the Departmental Chairman.

## READING

Education 291 - *Foundations of Reading Instruction* *3 credits*

A basic course in developmental reading designed to provide an overview of reading programs for grades K through 12. Emphasis is placed on the nature and dimensions of reading; the interrelationships among reading, thinking, and principles of learning; perspectives in reading including specialized approaches; and the components of the reading process as related to directed reading activities.

Education 292 - *Prevention and Detection of Reading Disabilities* *3 credits*

The role of the classroom teacher as a diagnostician of corrective and remedial reading disabilities. Emphasis is placed on the nature and causes of reading disabilities, as well as the methods used in preventing, detecting and correcting reading disabilities in the classroom. Educational diagnostic techniques are examined for the purpose of providing the classroom teacher with the skills necessary for preventing and detecting reading disability, and for adjustment of reading instruction to the needs of individual student. (Prerequisite: Education 291)

Education 293 - *Diagnosis of Reading Disabilities - Classroom Techniques* *3 credits*

A laboratory course covering diagnosis of reading disabilities, including attention to techniques of observation for continuous classroom diagnosis. Demonstrations of techniques and devices will be followed by actual practice in administering these diagnostic tools, scoring them and interpreting their

results. Work in case typing will culminate in writing of case reports. (Prerequisites: Education 291 and 292)

Education 294 - *Internship - Classroom Approaches* *3 credits*
An instructional internship for classroom teachers and/or reading specialists designed for developmental and corrective programs. Supervised field experiences provided parallel closely the regular classroom situations, including attention to individual differences. The laboratory work involves development of techniques and materials. (Prerequisites: Education 291, 292 and 293)

Education 295 - *Reading in the Content Areas* *3 credits*
A comprehensive study of the specialized reading skills, techniques and methods which are essential for effective reading and study in the content areas. Since competency in reading in subject matter areas requires distinct and complex reading and study skills, emphasis will be placed on the specialized vocabularies, concepts and skills which are considered to be necessary for the comprehension of the reading materials pertinent to each subject matter area. Attention will be given to the necessity of adjusting of reading instruction to the needs of individual students. With permission of instructor.

Education 296 - *Organization and Operation of Reading Programs* *3 credits*
A lecture-discussion course dealing with the responsibilities of a reading specialist in setting up and directing regular school and/or classroom programs. Attention is given to school-wide testing programs, selections and use of materials, and in-service programs. Some field experience provided. (Prerequisites: Education 291, 292, 293 and 294)

Education 297 - *Administration and Supervision of Reading Programs* *3 credits*
The role of the reading supervisor as an administrator of a school-wide reading program. Emphasis will be placed on the responsibilities of the reading supervisor in relation to initiating, supervising and administering reading programs and reading personnel. Consideration will be given to the methods, materials and evaluation procedures related to the total reading curriculum. Techniques for organizing and conducting appropriate in-service programs, workshops and demonstrations will be explored. Some field experiences will be provided. (Prerequisites: Education 291, 292, 293, 294)

Education 298 - *Clinical Approaches to Reading* *3 credits*
An instructional internship emphasizing clinical aspects of diagnosis and remediation. This course, designed for advanced graduate students, provides for both teaching and supervisory experience in either the University of Scranton Reading Clinic or in local school programs. With permission of instructor.

Education 299 - *Independent Study in Reading* *Variable*
For students who wish to carry on independent study in reading under supervision.

## COUNSELING AND EDUCATIONAL PSYCHOLOGY

Education 240 - *Foundations of Guidance* *3 credits*

The philosophy of guidance and its role in the total school program. The activities and techniques of the counselor are introduced, with special emphasis on the secondary-school counselor. Problems of organization, development, and administration of guidance services will be included. Required in the certificate program and must be taken during the first semester of graduate study.

Education 241 - *Group Methods in Counseling* *3 credits*

Provides a basic understanding of group dynamics and behavior. Processes and patterns of interaction are analyzed primarily from the standpoint of their broad educational significance. The selection, evaluation and use of group counseling methods and materials. Methods of developing and organizing group programs are also presented. Required in the certificate program as part of the sequence.

Education 242 - *Counseling Interview Techniques* *3 credits*

The application of counseling theory to the practical interview situation. Included will be the use of test and non-test data in counseling the individual student. The counselor candidate will be expected to refine his ability to analyze and synthesize pertinent information. Required in the certificate program and must be preceded by Educ. 254 and Educ. 275.

Education 243 - *Current Issues in Counseling and Guidance* *3 credits*

A professional seminar wherein emphasis is placed on the development of a sensitivity to the educational, sociological and philosophical implications of the counselor's role. This course is designed to provide for a smooth transition to the reality based school counseling situation. Individual counselor problems and deficiencies are identified and corrected. Required of all counselor education trainees.

Education 244.1 and 244.2 - *Supervised Counseling Experience* *4 credits*

Actual counseling of secondary school students under supervision. A variety of experiences are provided, including counseling with students on an individual as well as a group basis. Required in the certificate program. Admission is only by consent of the instructor.

Education 246 - *Occupational, Educational and Social Information* *3 credits*

Emphasis will be on the practical acquisition, evaluation and utilization of vocational, educational and social information. Psychological and sociological aspects of vocational choice and vocational adjustment will be presented and major theories of vocational development reviewed. Occupational and industrial classification systems will be studied, primarily in terms of their role in enhancing the process of secondary school counseling.

Education 253 - *Evaluation and Appraisal I* *3 credits*
A foundation course to provide the counselor with the quantitative principles and skills necessary for effective functioning in testing and action research settings. Relevant concepts in descriptive statistics, correlation, and tests of significance will be applied to principles of test construction.

Education 254 - *Evaluation and Appraisal II* *3 credits*
Emphasis will be placed on the development of competency in the evaluation, use, and interpretation of tests and inventories used in assessing abilities, achievement, interests and personality. The relationship of informal data to the analysis of individual behavior will be included. Selected instruments will be examined in terms of their design and appropriate utilization in the secondary school program. (Prerequisite: Educ. 253)

Education 262 - *Learning Theories* *3 credits*
A treatment of selected, well known learning theories. These are related to the learning process, derived from rational and empirical sources, with the object of showing relationships to teaching. (Prerequisite: Education 272)

Education 263 - *Contemporary Theories of Personality* *3 credits*
An orientation to theories of personality, including the history, development and contributions of certain theories. (Prerequisite: Education 275 or consent of instructor)

Education 268 - *The Education of Exceptional Children* *3 credits*
A general view of the field; historical background - both philosophical and legislative; survey of physical, mental and emotional handicaps and of giftedness; remedial and preventive practices; a look at the future.

Education 272 - *Human Development and Learning* *3 credits*
A treatment of the psychological phases of human development, with emphasis upon the first two decades of life. Stress is placed upon the importance of interaction between phases of development, learning and classroom instruction.

Education 274 - *Developmental Psychology* *3 credits*
An intensive treatment of psychosocial and biological aspects of human development with special emphasis on the implications for the counseling of secondary school students. Recommended for the certificate.

Education 275 - *Psychology of Adjustment* *3 credits*
Provides an understanding of adjustive behavior. Attention is given to factors that influence behavior with special attention to adjustment problems of secondary school students. Recommended in certificate program and must be preceded by Education 274 or equivalent.

## REHABILITATION COUNSELING

Rehabilitation Counseling 301 - *Introduction to Rehabilitation Services* *3 credits*
Historical and legal background of rehabilitation. The roles of rehabilitation workers and the nature of resources.

Rehabilitation Counseling 302 - *Rehabilitation Counseling* *3 credits*
Philosophy of rehabilitation and ethics for the counselor. Appraisal procedures and counseling techniques. Training and placement. Functions as coordinator and liaison person and the administrative and clerical procedures involved in the job.

Rehabilitation Counseling 303 - *Psycho-Social Aspects of Disability* *3 credits*
Emphasis is placed upon social-psychological situations confronting a person of a typical physique, and how he copes with them. Also considered are the external and internal factors which can aid or hinder psychological adjustment. Selected mental disorders are discussed in light of their affecting the life situation of the individual.

Rehabilitation Counseling 304 - *Medical Aspects of Disability* *3 credits*
Medical evaluation as part of the rehabilitation process. Study of body systems, medical terminology, and description of disabilities of importance to the counselor. Interpretation of medical information in reference to the social, psychological and vocational aspects of disabling conditions.

Rehabilitation Counseling 305 - *Vocational Evaluation in Rehabilitation* *3 credits*
Emphasis is on techniques of vocational evaluation peculiar to rehabilitation such as work samples, job analyses and situational approaches. Evaluation of special groups, blind, asphasic, retarded, emotionally disturbed, etc. will be presented. Field trips to facilities utilizing these approaches will be made.

Rehabilitation Counseling 306 - *The Study of Special Groups* *3 credits*
This course focuses on the psycho-social-cultural aspects of individuals in the following groups: the family, the public offender and delinquent, the alcoholic, the narcotic addict and user, the aged, the mentally retarded, the mentally ill, and the educationally, socially, and culturally disadvantaged. Emphasis is on describing the person in these groups — his personality, attitudes, value system, and social-cultural milieu—and providing treatment and counseling implications. Problems in their rehabilitation are also discussed.

Rehabilitation Counseling 308 - *Guided Field Work in Rehabilitation* *3 credits*
Directed group observation and discussion of habilitation and rehabilitation services provided in various community agencies: hospitals, clinics, therapy centers, work training centers, schools offering special education.

Rehabilitation Counseling 309 - *Rehabilitation Counseling Practicum* *3 credits*
Practice and application under supervision of the theory, principles, knowledge and skills to rehabilitation counseling and case management.

Rehabilitation Counseling 310 - *Internship in Rehabilitation Counseling* *12 credits*

Assignment in community rehabilitation agencies are made during the student's final academic semester. Internship assignments may include work in a district office of the Pennsylvania Bureau of Vocational Rehabilitation, Office for the Blind, private or public agencies serving the retarded, emotionally disturbed, orthopedically disabled, or culturally disadvantaged. The final semester may be spent in a sheltered workshop, rehabilitation center, hospital, or institute affiliated with the program.

Voad 311 - *Human Dynamics* *3 credits*

Preliminarily, the purpose of this course would be to present a generic view of human dynamics, adjustment and coping mechanisms, and relate these concepts to both normal and abnormal developmental processes. This course should not be confused with typically presented courses in either abnormal psychology or the psychology of adjustment, but rather should be viewed as a course bridging the two. Specifically, central concepts, for example, anxiety, would be discussed in terms of its physiological and psychological correlates, how it is related to adjustment and/or maladjustment, and how it affects various types of performances (problem-solving, work, etc.), how it is a normal reaction to a wide range of situational events, but how it also relates critically to many forms or emotional disturbances.

Voad 312 - *Group Processes* *3 credits*

The purpose of this course would be to emphasize group process and group dynamics in both group counseling and work-task oriented groups: supervisory and leadership roles, functions, and dimensions; and the dynamics of these with respect to in-service training, management concepts, personnel selection and team concepts.

Voad 313 - *Psycho-Social Conditions* *3 credits*

This course would emphasize diagnosis, etiology, medical and psychiatric terminology treatment of psycho-social disorders (particularly mental retardation and emotional disorders), and the implications for community and vocational adjustment.

Voad 314 - *Internship in Vocational Adjustment* *12 credits*

A selected placement in a participating state agency and/or institution.

## GRADUATE - UNDERGRADUATE COURSES

Political Science 407 - *Public Administration* *3 credits*

Nature of public administration; structures and statutory limitations; staff organization and flow of command; employment policies, personnel training and management; employee organization; public relations.

Sociology 404 - *Cultural Anthropology* *3 credits*

Study and comparison of the learned, shared and transmitted behavior patterns and ideals by which man has worked out his social relations, dealt with his environment and defined his place in the world.

Sociology 406 - *Community Organization* *3 credits*
A general introduction to the field and process of community organization, both as a field of social work, and as a field of human endeavor. The coordination and financing of welfare activities, methods of appraising community needs and resources, planning and the initiation of welfare services. Services of a voluntary and governmental nature.

Sociology 411 - *Urban Sociology* *3 credits*
A sociological analysis of the development and effects of modern urbanization on human institutions, population trends and social relationships. The interrelationships, form, structure and organized life in cities, patterns of urban structure and cities of the future. The role of politics, social agencies and elements making for organization and disorganization. Urban planning and redevelopment.

Sociology 413 - *Juvenile Delinquency* *3 credits*
Juvenile delinquency as a social problem. Methods of treatment and prevention, including juvenile courts, clinics, probation, parole, correctional institutions, child placement and recreational programs.

Sociology 414 - *American Minority Groups* *3 credits*
A study of the cultural background, distribution, assimilation and other adjustments of minority groups; problems arising from the contacts of these people who differ as to race and culture. Prejudice and discrimination as opposed to the democratic ideology will be considered.

# COURSE PROJECTION—EDUCATION

| Courses | Fa 70 | Sp 71 | Su 71 | Fa 71 | Sp 72 | Su 72 | Fa 72 | Sp 73 | Su 73 | Fa 73 | Sp 74 | Su 74 | Fa 74 | Sp 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 202 | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 205 | x | | x | x | | x | x | | x | x | | x | x | |
| 206 | | x | | | x | | | x | | | x | | | x |
| 207 | | | x | | | | | | x | | | x | | |
| 221 | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 221.1 | x | | | x | | | x | | | x | | | x | |
| 222.2 | | x | | | x | | | x | | | x | | | x |
| 222.3 | | x | | | x | | | x | | | x | | | x |
| 222.4 | | | x | | | | x | | x | | | x | | |
| 222.5 | | | x | | | x | | | x | | | x | | |
| 222.6 | | | x | | | x | | | x | | | x | | |
| 222.7 | | | | x | x | | x | x | | x | x | | x | x |
| 223 | x | | x | x | | | x | | | | | | | |
| 225 | x | | x | x | | x | x | | x | x | | x | x | |
| 230 | x | | | x | | x | x | | | x | | x | x | |
| 231 | | x | x | | x | | | x | x | | x | | | x |
| 232 | | x | | | x | | x | x | | | x | | | x |
| 233 | x | | x | x | | x | x | | x | x | | x | x | |
| 234 | | x | | | | x | | x | | | x | | | x |
| 235 | | x | | | x | | x | x | | | x | | | x |
| 236 | | | | | | | | | | | | | | |
| 237.1 | x | | | x | | | x | | | x | | | x | |
| 237.2 | | x | | | x | | | x | | | x | | | x |
| 240 | x | | x | x | | | x | | x | x | | | x | |
| 241 | x | x | | x | x | x | x | x | | x | x | x | x | x |
| 242 | x | x | | x | x | x | x | x | | x | x | x | x | x |
| 243 | x | x | x | x | x | | x | x | x | x | x | | x | x |
| 244.1 | x | x | | x | x | x | x | x | | x | x | | x | x |
| 244.2 | x | x | x | x | x | | x | x | x | x | x | x | x | x |
| 246 | | x | | | | x | | x | | | x | x | | x |
| 251 | | x | | | | x | | x | | | x | x | | x |
| 253 | x | | | x | | x | x | | | x | | x | x | |
| 254 | | x | x | | x | | | x | x | | x | | | x |
| 257 | | | x | | | x | | | x | | | x | | |
| 262 | | x | | | x | | | x | | | x | | | x |
| 263 | x | | x | x | | | x | | x | x | | | x | |
| 268 | | | x | | | | | | x | | | | | |
| 272 | x | | x | x | | | x | | x | x | | | x | |
| 274 | | x | | | x | | | x | | | x | | | x |
| 275 | | x | | | x | | | x | | | x | | | x |
| 282 | x | | | | | | x | | | | | | x | |
| 283 | | x | | | | | | x | | | | | | x |
| 284.1 | | | | x | | | | | | x | | | | |
| 284.2 | | | | | x | | | | | | x | | | |

# COURSE PROJECTION—EDUCATION

| Courses | Fa 70 | Sp 71 | Su 71 | Fa 71 | Sp 72 | Su 72 | Fa 72 | Sp 73 | Su 73 | Fa 73 | Sp 74 | Su 74 | Fa 74 | Sp 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 285 | | | | | | x | | | | | | x | | |
| 286 | x | | | x | | x | | x | | x | | x | x | |
| 286.1 | | x | x | | x | | x | | x | | x | | | x |
| 287 | x | | | x | | x | | x | | x | | x | x | |
| 287.1 | | x | x | | x | | x | | x | | x | | | x |
| 288 | | x | | x | x | x | | x | | x | | x | x | |
| 288.1 | x | | x | | | | x | | x | | x | | | x |
| 290 | | | | | | | | | | | | | | |
| 291 | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 292 | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 293 | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 294 | | x | | | x | | | x | | | x | | | x |
| 295 | x | | x | x | | x | x | | x | x | | x | x | |
| 296 | | x | | | x | | | x | | | x | | | x |
| 297 | x | | | x | | | x | | | x | | | x | |
| 298 | x | | | x | | | x | | | x | | | x | |
| 299 | | x | | | x | | | x | | | x | | | x |
| 301 | x | | | x | | | x | | | x | | | x | |
| 302 | | x | | | x | | | x | | | x | | | x |
| 303 | x | | | x | | | x | | | x | | | x | |
| 304 | x | | | x | | | x | | | x | | | x | |
| 305 | x | | | x | | | x | | | x | | | x | |
| 306 | x | | x | x | | x | x | x | x | x | | x | x | |
| 308 | x | | | x | | | x | | | x | | | x | |
| 309 | x | | | x | | | x | | | x | | | x | |
| 310 | | x | | | x | | | x | | | x | | | x |

# Department of Business Administration

Dr. Joseph R. Zandarski, Chairman

## DEPARTMENTAL REQUIREMENTS

The applicant for admission should possess the baccalaureate degree in Business Administration and provide the Admissions Committee with evidence of sufficient undergraduate preparation of good quality in Business Administration or Accounting.

A minimum undergraduate quality point average of 2.4 (on the basis of "A" equals 4.0) will be required. An applicant unable to satisfy this requirement may be admitted on the basis of an acceptable score on a national examination such as, the Admission Test for Graduate Study in Business, the Graduate Record Examination or the Miller Analogies Test.

If the student possesses a baccalaureate degree other than in Business Administration he will be further required to provide evidence that the following undergraduate courses have been successfully completed: Business Law - 3 credits; Accounting - 6 credits; Economics - 6 credits; Corporation Finance - 3 credits; Statistics - 3 credits, and an additional 9 credits in Business Administration or Economics.

## COURSE REQUIREMENTS

All students who intend to work for the degree of Master of Business Administration must take a basic core of courses in the field of Business Administration amounting to 12 credits. Students who have had differential calculus will substitute an elective course for Business 209. Eighteen additional credits are required in courses to be elected from the areas of Accounting, Management, Finance, Marketing and Economics. Nine credits must be obtained in one of these fields of concentration, while the remaining 9 may be in any of the other fields. Thus, the total number of credits required for graduation is thirty.

## CANDIDACY

Students seeking the M.B.A. degree must, before completing nine graduate credits in Business Administration, file an application for candidacy. On receipt of this application and the completion of nine graduate credits in Business Administration, the student's record will be reviewed by his mentor and the Chairman of the Department to determine that all prerequisites have been met and to appraise his potential for successful completion of graduate work and growth in his field. No one will be permitted to continue his credits toward the M.B.A. degree until he has been formally admitted to candidacy.

## PROGRAM IN BUSINESS ADMINISTRATION

### Core Courses

Bus. 200 Business Research Methodology
Bus. 205 Managerial Economics
Bus. 209 Mathematics for Business
Bus. 215 Business Policy

### Advanced Courses—Electives

Bus. 220 Managerial Accounting
Bus. 223 Advanced Accounting Theory
Bus. 225 Accounitng Systems
Bus. 242 Quantitative Management
Bus. 244 Labor - Management Problems
Bus. 246 Management of Human Resources
Bus. 260 Marketing Management
Bus. 261 Marketing Research
Bus. 262 Sales and Advertising Problems
Bus. 280 Financial Management
Bus. 281 Financial Institutions
Bus. 283 Investment Analysis
Bus. 290 Business Conditions Analysis
Bus. 291 Advanced Economic Theory
Bus. 293 International Economics

# Course Descriptions - Business

## CORE COURSES

Bus. 200. *Research Methodology* *3 credits*
Research methods in business and economics, with special attention to research techniques, application of quantitative method, bibliographic sources, and preparation of written research findings. This course should be taken the first time it is offered after the student is admitted to the program.

Bus. 205. *Managerial Economics* *3 credits*
An intensive study of the problems of value and costs, including supply and demand, cost analysis and pricing theories, monopoly and competition, price control and allocation, and policies of the government as they affect prices.

Bus. 209. *Mathematics for Business* *3 credits*
An introduction to various mathematical methods useful in the solution of business problems. Topics include simple functions, limits of a function, some differential and integral calculus, and some of their applications to business problems. If the student has passed a course in calculus, he may substitute any elective for this course.

Bus. 215. *Business Policy* *3 credits*
Starting with conceptual and institutional foundations of business, the course covers the philosophy, history and ethics of business policy, culminating in the specific areas of policy, accounting, finance, marketing and management. This course should be taken in the last semester of the student's program, and only after all other core and major courses are completed.

## ADVANCED COURSES—ELECTIVES

Bus. 220. *Managerial Accounting* *3 credits*
A study of the accounting techniques and their effective use in managerial organization and administration. Emphasis will be placed on the principles of cost accounting and the statement of application of funds.

Bus. 223. *Advanced Accounting Theory* *3 credits*
A study of the theories underlying accounting principles and the application of these theories and principles in specific situations. Current literature taken from various accounting periodicals and recent C.P.A. examinations will be used extensively. Emphasis is placed on the importance of high standards in the accounting profession and its importance to management.

Bus. 225. *Accounting Systems* *3 credits*
How to make an accounting survey of a business, select the methods to be used, design the system of procedures and prepare the systems report for businesses of varied types and sizes.

Bus. 242. *Quantitative Management* *3 credits*
The quantitative approach to managerial problems of planning and controlling the design and operation of business enterprises. Topics include the use of personal probability as a basis for rational decision making, and operations research techniques including mathematical programming, queues, simulation and inventory theory. (Prerequisite: Bus. 209 or its equivalent)

Bus. 244. *Labor-Management Problems* *3 credits*
An analysis of the policies of employers, organized labor and the government, in attempting to solve labor-management problems, with an appraisal of the results. Discussions include evaluations of social, economic and legal trends as well as leading cases on the subject.

Bus. 246. *Management of Human Resources* *3 credits*
An understanding of manpower development, objectives, and policies involved in a business enterprise as found in a sound industrial relations program.

Bus. 260. *Marketing Management* *3 credits*
The many legal, competitive, social and administrative problems which face the marketing executive and the methods and tools used in solving these problems. Factual cases will be used throughout the course.

Bus. 261. *Marketing Research* *3 credits*
Research techniques used in solving marketing problems in both motivation and product research, including research methods and design, questionnaire construction, sampling and analysis; the contributions of the behavioral sciences to marketing research.

Bus. 262. *Sales and Advertising Problems* *3 credits*
Advertising and the sales efforts as tools of management in marketing industrial and consumer goods and services, and the effectiveness of these tools in achieving their marketing objectives.

Bus. 280. *Financial Management* *3 credits*
Principles of policy formulation in the modern corporation; the institutions, instruments and customary procedures that influence the determination of corporate policy; and the reasons for choices in seeking solutions to specific financial problems.

Bus. 281. *Financial Institutions* *3 credits*
A detailed survey of the more important financial institutions of the United States in order to determine their functions and inter-relations in the national economy, and their importance in the various fields of business administration.

Bus. 283. *Investment Analysis* *3 credits*
The investment markets and the financial analysis of various types of investments including industrial, railroad, utility, financial institutions, real estate, government, municipal and foreign securities; the mathematics and mechanics of investments.

Bus. 290. *Business Conditions Analysis* *3 credits*
A critical evaluation of gross national product, disposable personal income, population changes, rate of economic growth, and their effects on sales. Methods of forecasting sales of capital goods, durable and non-durable consumer goods.

Bus. 291. *Advanced Economic Theory* *3 credits*
The modern economy as a whole in its aspects of total income, aggregate demand, total output and employment, as well as their significant components and determinants. Relationship between micro-macro analysis.

Bus. 293. *International Economics* *3 credits*
International trade theories and policy implication, with particular emphasis on present foreign economic policy of the United States. The economic forces and institutions which throw light upon and condition political relationships between nations.

Bus. 294. *Research Seminar* *variable credit*
Designed for students who are working on directed research projects. Registration is only with permission of the Department Chairman and the Dean.

# Department of English

Dr. Richard H. Passon, Chairman and Director of Graduate Program

## DEPARTMENTAL REQUIREMENTS

The applicant must, at the time of application, possess a baccalaureate degree and must have completed on the undergraduate upper-division level a minimum of 18 semester hours in English; and must, further, have a Quality Point Index of not less than 2.5 (of a possible 4.0) in the required undergraduate courses. The applicant will not be considered matriculated to candidacy for the degree until he has successfully completed six (6) graduate credits in English and has successfully passed a qualifying examination. This examination may be: 1) the Graduate Record Examination; 2) the Departmental Qualifying Examination of the University of Scranton; or 3) the Senior Comprehensive Examination for English majors of the University of Scranton. The student will then be evaluated by a committee of the Department of English and his acceptance or rejection as a candidate for a graduate degree will be decided. No student may continue to take credits toward a degree until he has been formally notified of his acceptance as a candidate, at which time a mentor will be assigned to him. The regulations determining candidacy, in general, are applicable to both the M.A. and M.S. (correlated) programs.

## COURSE REQUIREMENTS

### A. Master of Arts in English

Candidates for the degree of Master of Arts in English may select a thesis or non-thesis program. The thesis program will require the student to complete successfully twenty-seven credits in courses in English, as outlined below, pass a Comprehensive Examination, and present a critical study (dissertation) of 12,000 to 20,000 words. Three (3) hours of credit are allowed for the dissertation.

The specific course requirement for this degree is:

English 200. Introduction to Literary Scholarship and Linguistics (3 credits)

The remaining twenty-four course credits are to be taken in courses approved by the mentor. These courses should be so chosen as to combine student interest in certain periods or genres, and coverage both in range and depth of the field of British and American Literature.

The thirty credit hours necessary for the degree are completed with the three hours of credt for the dissertation.

The non-thesis program will require the student to complete successfully thirty-three credits in courses in English, including English 200, and pass a Comprehensive Examination.

### Master of Science - Correlated Program

A total of thirty-three hours of credits, distributed between courses in English and Education, will be required for this degree, for which no dissertation is necessary. The candidate must also successfully pass a Comprehensive Examination in Education.

Refer to correlated program with education.

If the Master of Arts degree is to be terminal, students will not be required to fulfill a modern language requirement. Nor will there be language requirements for students following the Master of Science (Correlated) program.

Students intending to continue graduate studies elsewhere to the Doctoral level will be required to fulfill a language requirement: any modern language may be offered in fulfillment of this requirement.

# Course Descriptions - English

English 200. *Introduction to Literary Scholarship and Linguistics* *3 credits*
Introduction to the specialized tools of research required of the student of language and literature.

English 203. *Literary Criticism.* *3 credits*
Theory of literary criticism and the principles of literary aesthetics.

English 208. *Advanced Composition.* *3 credits*
The interrelationship of grammar, rhetoric, logic, semantics, and criticism in the communication of ideas. Examines important texts designed to improve and fortify students' techniques in teaching composition. Students participate by writing essays of graduated intensity, length, and depth of subject matter.

English 211. *Survey of Medieval English Literature.* *3 credits*
Critical study of the major genres of the Middle English period, emphasizing the dynamic impulses of the society reflected. Chaucer is excluded.

English 214. *Chaucer.* *3 credits*
a) Chaucer I: Reading of the **Canterbury Tales,** with attention to the medieval culture which they reflect.
b) Chaucer II: Reading of the **Troilus and Cressida** and **The Parliament of Fowls,** with attention to the medieval culture which they reflect.
(a and b are offered alternately.)

English 218. *Spenser.* *3 credits*
Critical study of Spenser's **Faerie Queene,** stressing the literary and intellectual background of the Age of Elizabeth.

English 220. *Shakespeare's History Plays.* *3 credits*
Thorough study of the first and second tetralogies, against the background of English history and Shakespeare's use of his sources.

English 221. *Problems in the Interpretation of Shakespeare.* *3 credits*
Study of the meanings of Shakespeare's major comedies and tragedies.

English 230. *Seventeenth Century English Poetry.* *3 credits*
Metaphysical Poetry of Donne, Herbert, Vaughan, Crashaw, and Marvell, emphasizing the cultural background of the times and the influences on subsequent poetry.

English 231. *Tudor and Stuart Drama.* *3 credits*
Critical study of representative plays by the major Tudor and Stuart dramatists, exclusive of Shakespeare: Marlowe, Jonson, Chapman, Webster, Massinger, Ford, and Shirley.

English 234. *Milton.* *3 credits*
Critical study of Milton's poetical works, his sources and his literary form.

English 236. *Pope and His Age.* *3 credits*
Study of the writings of Pope, Addison, Steele, Swift, Defoe, and others, in the light of the social, political, and intellectual background of the first half of the eighteenth century.

English 238. *Johnson and His Age.* *3 credits*
Study of the writings of Johnson, Boswell, Goldsmith, Burke, Crabbe, and Cowper, in the light of the social, political, and intellectual background of the second half of the eighteenth century.

English 240. *Romantic Poetry and Criticism.* *3 credits*
Examination of the poetry and critical writings of Wordsworth, Coleridge, Byron, Shelley, and Keats, in the light of the Romantic backgrounds of the late eighteenth and early nineteenth centuries.

English 243. *Victorian Poetry and Criticism.* *3 credits*
Study of the major poets and critics of the Victorian Age: Tennyson, Browning, Arnold, Ruskin, and Pater.

English 244. *Victorian Fiction.* *3 credits*
Reading of selected novels of the Brontes, Dickens, Thackeray, Trollope, Meredith, and Thomas Hardy, in the light of the social, political, and intellectual background of the Victorian Age.

English 247. *America in Literature I.* *3 credits*
Colonial and Romantic Periods. A survey of the important writings from the early settlements to the time of the Civil War.

English 250. *Modern British and American Poetry.* *3 credits*
Poetic experimentation and development in the work of Hopkins, Yeats, Eliot, Auden, Moore, Frost, Spender, Dylan Thomas, and others.

English 252. *Modern British Fiction.* *3 credits*
Intensive study of British novelists from Hardy to the contemporaries, in the light of the historical, social, and intellectual climate of the age.

English 255. *Modern British and American Drama.* *3 credits*
Study of the major British and American dramatists from the time of the Irish literary revival to the present day: Synge, Yeats, O'Casey, Shaw, O'Neil,Tennessee Williams, and Arthur Miller.

English 258. *America in Literature II.* *3 credits*
Emergence of Realism. An Examination of American Literature from the Civil War to 1920.

English 259. *America in Literature III.* *3 credits*
Modern American Literature. The period from 1920 to the present will be covered, exclusive of the drama.

English 270. *Seminar in Genre.* *3 credits*
A concentrated study of a major figure, a limited group of figures, or of a specific genre. Admission to this course by permission of the instructor, on application.

English - Education 237. 2 *The Teaching of English Literary Types in the Secondary School.* *3 credits*
Consideration will be given narrative and lyric poetry, prose forms, and drama. Techniques of methodology and organizational patterns are suggested.

# Department of History

Prof. Timothy H. Scully, Chairman and Director of Graduate Program

## DEPARTMENTAL REQUIREMENTS

The applicant must possess the baccalaureate degree and should as an undergraduate have completed a minimum of 18 upper-division semester hours in History, six of which must be in American History. Courses in Government, Political Science or cognate fields may round out the 12 other required undergraduate elective credits. The applicant should have a Quality Point Index of not less than 2.5 in all his undergraduate course work or have attained a score of 500 on the GRE. He will be considered as non-matriculated until he has successfully completed six graduate credits in History and filed formal application for candidacy. His acceptance as a candidate will be decided at that time by the History Department, after their appraisal of his capability for continued growth as a graduate student. No student may continue to take credits toward the degree until he has been notified of his acceptance as a candidate. At that time his mentor will be appointed.

## MASTER OF ARTS IN HISTORY

Candidates for the Master of Arts in History may select a thesis or non-thesis program. The thesis program will require the student to complete successfully twenty-seven credits in courses described below, pass the Comprehensive Examination and present an acceptable dissertation for which three credits are allowed. The thesis topic must be approved by the student's mentor under whose active direction the dissertation should be satisfactorily completed. The Degree Candidate will be required to defend his thesis before a committee appointed by the Dean.

Twenty-one of the course credits must be acquired in History, the major field. In the event that significant gaps occur in the student's undergraduate background, additional graduate courses may be specified by the mentor. All students are required to take History 200, and at least three two-semester courses.

The non-thesis program will require the student to complete successfully thirty-three credits in History and Politics courses and pass a Comprehensive Examination.

These minor courses should be integrated with the student's program and are subject to the mentor's approval.

## MASTER OF SCIENCE - CORRELATED

A total of 33 credits in course work will be required of candidates for this degree, for which no dissertation is required. The candidate must also successfully pass a Comprehensive Examination in Education.

Refer to correlated program with education.

# Course Descriptions - History

Hist. 200. *Science and Methods of American Historians* *3 credits*
A study and application of the scientific methodology required for gathering, assessing, synthesizing, and documenting historical information. Special attention will be given to the American historians who typify the distinct traditional approach and to those who represent significant departures from that trend.

Hist. 203. *History of the American Presidency* *3 credits*
American Party System in selection of the President will serve as an introduction to a detailed analysis of the office, functions and powers of the Chief Executive.

Hist. 205. *History of American Federalism* *3 credits*
Evolution, development and changes in federal and state relations, with an analysis of the forces influencing these changes.

Hist. 208. *The American Heritage I* *3 credits*
Influences affecting the development of the American Nation; puritanism and its effect on the colonial experience; controversy occasioned by the Revolution of 1776; Hamiltonian and Jeffersonian ideals at work; implications of the Secessionist and Slave controversies on American institutional life.

Hist. 209. *The American Heritage II* *3 credits*
Impact of Reconstruction: Social Darwinism; Imperialism; Liberalism and Conservatism on Contemporary American Institutions form the basis of evaluation and interpretation.

Hist. 210. *American Constituional Law and History* *3 credits*
Emphasis on the bases of American constitutionalism, the Federal Convention, the development of the judicial process, states rights vs. nationalism, Marshall and Taney Courts, and other issues which led to the Civil War.

Hist. 211. *American Constiutional Law and History II* *3 credits*
The Fourteenth Amendment will initiate the second phase of this course. Problems dealing with Federalism, civil liberties and religious freedom will be treated.

Hist. 212. *Development of American Civilization I* *3 credits*
The leading economic, social and cultural aspects of American life; study of the economic, religious and intellectual bases of colonial American life; the impact of the Revolution; development of towns and country life; sectional differences; early labor movements; growth of democracy and reform movements.

Hist. 213. *Development of American Civilization II* *3 credits*
A continuation of the above course from 1865 to the present. The growth of industry, agriculture and agrarian discontent; the waning frontier; labor and immigration; literature and the arts; the diffusion of knowledge, religious tendencies.

Hist. 214. *American Foreign Relations to 1848* *3 credits*
Analysis of diplomatic principles by surveying the diplomacy of the American Revolution, the Confederation, and the early years of the Republic. Emphasis will be placed on the treaty making powers in the Constitutional Convention, the Louisiana Purchase, the War of 1812, the Monroe Doctrine and the Mexican War.

Hist. 215. *American Foreign Relations: 1848-1920* *3 credits*
A study of the consolidation of America, Manifest Destiny, the Civil War, Expansion of the Far East, the New Manifest Destiny, the Spanish American War, Big Stick Diplomacy, World War I, and the League of Nations.

Hist. 217. *American Foreign Relations: 1920 to the Present* *3 credits*
The United States foreign policy since World War I, collective security and disarmaments, the Rooseveltian neutrality, World War II, and the Post War World.

Hist. 218. *Political and Social History I: Colonial America to 1783* *3 credits*
European beginnings — the English settlements; colonial society and politics; the struggle for the Mississippi Valley; the War of Independence.

Hist. 220. *Political and Social History of U. S. II: 1789-1852* *3 credits*
American internal developments in the early years of the Constitution and th early Presidents, Jacksonian democracy's impact on American life; the impulse toward territorial expansion and the sharpening of regional clashes.

Hist. 222. *Political and Social History of U. S. III: 1852-1900* *3 credits*
Analysis of the social, economic and political conditions that resulted in the struggle for Southern Independence; the war years in the North and the South; Reconstruction, big business; organized labor; internal political issues from Andrew Johnson to Theodore Roosevelt.

Hist. 224. *Political and Social History of U. S. IV: 1900 - Present* *3 credits*
Tracing American development after 1900, stress will be placed upon the Roosevelt Era and its Progressivism, Wilson's New Freedom and the problems of World War I. The return to "normalcy," the Great Depression and the New Deal; F. D. Roosevelt and world politics, the origins and aftermath of World War II.

Hist. 228. *America in Literature I: The Colonial and Romantic Periods* *3 credits*
Survey of the important writings from the earliest settlements to the Civil War.

Hist. 229. *America in Literature II: The Emergence of Realism* *3 credits*

Examination of American Literature from the Civil War to 1920, including the new designs in poetry and the trend towards literary naturalism.

Hist. 230. *America in Literature III: Modern American Literature* *3 credits*

The period from 1920 to the present, excluding the drama. Major Novelists, poets and critics to be discussed.

Hist. 237.1 *Teaching of History and Social Science* *3 credits*

A consideration of the objectives of social studies, organizing the subject matter, textual and non-textual materials, the social studies curriculum, outcomes and their evaluation.

# Department of Chemistry

Dr. Umbay H. Burti, Chairman and Director of Graduate Program

## DEPARTMENTAL REQUIREMENTS

The applicant must, at the time of application, possess a baccalaureate degree and have ordinarily completed on the undergraduate level General and Analytical Chemistry and one full year's course in each of the following: Organic Chemistry, Physical Chemistry, General Physics, and Mathematics through Integral Calculus. Further, the applicant must have an over-all Quality Point Index of 2.5, with 2.5 in the Chemistry and other Science Courses. Certain of these qualifications may be waived at the discretion of the Department Chairman.

Students with limited course deficiencies in undergraduate preparation may be admitted with the approval of the Chemistry Faculty but should correct such deficiencies concurrently with their initial graduate courses.

The applicant will not be considered matriculated to candidacy for the degree until the following requirements have been satisfied:

1. Satisfactory completion of at least two courses in the Graduate Division.
2. Satisfactory completion of the Qualifying Examinations. Such examinations cover the areas of Organic, Analytical, Inorganic and Physical Chemistry. These examinations must be taken early in the first semester of the student's enrollment in the program.
3. Candidacy requirements must be fulfilled not later than the completion of eighteen credits in the Graduate Division.
4. At the discretion of his mentor, a student might be required to complete one Laboratory Preparation course in the Graduate Program, and/or a course in Chemical Literature in the Undergraduate Program.

The normal graduate load is 9-10 credits per semester. A Master's Degree will ordinarily require 3 to 4 semesters of study.

## COURSE REQUIREMENTS

### A. Master of Arts in Chemistry

Candidates for the degree of Master of Arts in Chemistry must complete successfully 24 credits in Chemistry, as outlined below, pass a Comprehensive Examination, and present a thesis demonstrating a distinct contribution to the field. Six (6) credit hours are allowed for the thesis which must be defended.

Prior to engaging in research relative to the thesis, the candidate must present a proposal for such research to his mentor and defend such proposal before the Chemistry Department Faculty. Arrangements are to be made with the candidate's mentor.

The specific course requirements for this degree are: Chem. 202, 211, 221, 222, 241, and 242. In addition, a basic laboratory course in the student's field of specialization will be taken unless sufficient preparation in advanced techniques is established. Attendance at Departmental Seminars is mandatory. An additional six (6) credits may be selected from elective courses in the student's field of specialization (analytical, biochemistry, organic, or physical). Research under the Mentor's direction culminates in a thesis which must be defended before the chemistry faculty.

For the Master of Arts degree, success in a German, French or Russian reading examination is also one of the requirements.

### Special Five Year Program for Undergraduates

A special five year program leading to the Master of Arts degree has been developed to enable a high school graduate to obtain his Bachelor of Science and Masters Degree in Chemistry within this prescribed period. Undergraduates in Chemistry may apply for acceptance into the 5 year program upon completing their freshman year. Inclusion in the program involves accelerated study during the following two (2) years and the student will be expected to spend at least one entire summer, usually in his junior year, anticipating some of the usual undergraduate requirements. The senior year is divided equally between concluding undergraduate requirements and initiating fundamental or core courses of the graduate curriculum. Research, forming the bases of the thesis, will be initiated in the summer following the senior year and continue for two (2) subsequent semesters. In the fifth (5th) year, elective graduate courses for the degree are completed.

Students in this program will make formal application to the Graduate School at the end of their Junior year. The application fee is waived. Such students will retain their mentor assigned in the Undergraduate Program. The Graduate Qualifying Examinations will substitute for the Undergraduate Comprehensive Examinations.

### B. Master of Science in Chemistry

The Master of Science Degree is awarded for successful completion of a non-thesis program.

A student accepted for graduate study under this program clears qualifying examinations as above and similarly plans his program.

Again, limited deficiencies are corrected prior to or concurrently with graduate studies.

In this program thirty (30) course credits will be required. Core courses, as above, are: Chem. 202, 211, 221, 222, 241, and 242. Additional elective courses totaling 12 credits complete the program. To provide for flexibility in the program and the undergraduate needs, one or more graduate courses in mathematics or cognate sciences may be taken as electives.

No thesis or language examination is required but comprehensive examinations are an integral part of the degree requirements.

### C. Master of Science in Chemistry for Secondary School Teachers

A non-thesis degree designed specifically for high school teachers, requiring thirty credits, including fifteen credits in Chemistry and six credits in the Teaching of Chemistry. Great latitude is allowed in filling in the nine elective credits to suit the candidate's interests and needs, There is no language or qualifying examination requirement.

For admission applicants should have completed as a minimum, two semesters of General Chemistry, two additional semesters in Chemistry, one year of College Physics and one year of College Mathematics. Provisions are made to remove any deficiencies as prerequisites.

This program can usually be completed in the course of five summers or the equivalent during the academic year.

### D. Correlated Master of Science in Secondary Education — Chemistry

The correlated Master of Science Degree in Secondary Education — Chemistry is designed for the professional improvement of secondary school teachers.

After acceptance for graduate study and qualifying examinations, an integrated course of studies is arranged under the Mentor's direction. Limited deficiencies in Chemistry preparation or background will be remedied prior to or concurrently with graduate studies.

Thirty-three credits are required for the degree of which fifteen (15) will be in Chemistry and eighteen (18) in graduate education courses. The required courses in Chemistry are: Chem. 202, 221, and 241. An additional 6 credits of electives in graduate chemistry are acceptable.

Neither a thesis nor a language requirement must be fulfilled, but comprehensive examinations in Chemistry and Education are prescribed.

# Course Descriptions - Chemistry

Chem. 202. *Advanced Inorganic Chemistry* *3 credits*
Theoretical concepts and their application to the reactions and structure of inorganic compounds. Introduction to co-ordination chemistry. Coordination chemistry and related topics; physical methods, reaction mechanisms.

Chem. 211. *Advanced Analytical Chemistry* *3 credits*
Theory and description of modern analytical techniques with emphasis on physico-chemical measurements, including the limitation of physical and chemical separation techniques, and rates and mechanisms of analytical reactions.

Chem. 213. *Electro-Analytic Chemistry* *3 credits*
Theory and applications of potentiometry, polarography, amperometry, coulometry, mass spectrometry and other analytical methods.

Chem. 214. *Applied Spectroscopy* *3 credits*
Theory and applications in chemical analysis of emission spectroscopy, flame photometry, ultraviolet, visible and infrared spectrophotometry, fluorometry and various x-ray methods.

Chem. 218. *Analytical Methods* *1 credit*
Laboratory practice with special analytical apparatus and methods used for process and control, and for research.

Chem. 221-222. *Advanced Organic Chemistry* *6 credits*
A survey of synthetic and theoretical organic chemistry at an advanced level, with emphasis on stereochemistry and mechanism.

Chem. 223. *Theoretical Organic Chemistry* *3 credits*
A study of the methodology of determining the relationship of structure to reactivity, the mechanisms of important reaction types and the factors that can influence rates and pathways. (Prerequisite: Chem. 222)

Chem. 224. *Heterocyclic and Organometallic Chemistry* *3 credits*
An introductory survey of the structure and reactivity of important types of heterocyclic and organometallic compounds. (Prerequisite: Chem. 222)

Chem. 228. *Organic Preparations* *1 credit*
Laboratory performance of a number of typical organic syntheses, with an emphasis on the most modern techniques.

Chem. 233-234. *Biochemistry* *6 credits*
Chemistry of carbohydrates, lipids, proteins and nucleic acids. Mechanisms and kinetics of enzyme action. A study of the metabolism, digestion and absorption of carbohydrates, lipids, amino acids and proteins.

Chem. 237.3. *Teaching of Chemistry* *3 credits*
Use of modern methods in the teaching of Chemistry on a secondary level.

Recent developments in the treatment of subject matter, including advances in laboratory techniques and demonstration methods. Review of concepts of research as they apply to Chemistry.

Chem. 238. *Biochemical Preparations* *1 credit*
Application of modern theories to biological chemical methods. Spectroscopy, chromatography, polarimetry, electrophoresis, ionophoresis. Applied problems in biochemical research using modern biochemical methods.

Chem. 243. *Chemical Kinetics* *3 credits*
The mechanics of chemical reactions as revealed by various methods. Rate measurements and photo-chemical experiments are discussed. Topics include transition state theory and collision theory, unimolecular reactions, ionic reactions, modern experimental approaches to the nature of the transient intermediates and elementary reactions, molecular structure and reactivity, catalysis, tracer studies, hydrodynamics and kinetics, combustion and detonation.

Chem. 241-242. *Advanced Physical Chemistry* *6 credits*
A comprehensive treatment of modern aspects of physical chemistry. The application of chemical thermodynamics to thermochemistry and chemical equilibrium. Advanced concepts of the theories of atomic and molecular structure. Quantum theory and introduction to wave mechanics.

Chem. 244. *Statistical Thermodynamics* *3 credits*
A vigorous treatment of the applications of the laws of thermodynamics to chemical systems, including an introduction to statistical mechanics, with emphasis on the statistical interpretation of thermodynamic partition functions and the reversible and irreversible thermodynamic behavior of chemical substances. (Prerequisite: Chem. 242)

Chem. 245-246. *Intermediate Physical Chemistry* *6 credits*
A review of the fundamentals of chemical principles, and a treatment of the mathematics requisite for such review. Two semesters—this course is offered for graduate credit in program "C" only.

Chem. 251. *Seminar* *1 credit*

Chem. 255. *M.A. Thesis* *variable up to 6 credits*

Chem. 257-258. *Chemistry on a Secondary Level* *6 credits*
This course is treated on a Lecture-Seminar basis with respect to content and methods dealing with Chemistry in the secondary school curriculum. Two semesters. This is similar to N.S.F. course in Chemistry. Only 6 credits total from this series may be claimed for degree.

Chem. 261. *Polymer Chemistry* *3 credits*
Introduction to the physico-chemical aspects of polymers: emphasis on structure, properties and application; thermodynamics of polymer solutions; statistical mechanical consideration of polymers; theories of rubber elasticity.

# Department of Physics

Dr. Eugene J. McGinnis, Chairman and Director of Graduate Program

## DEPARTMENTAL REQUIREMENTS

The applicant for admission must possess the Baccalaureate degree in Physics or a related fiield in Engineering. An overall quality point average of 2.5 is required with a 2.7 average in the Physics and Mathematics courses. The applicant will ordinarily be expected to have completed as an undergraduate at least 24 credits in Physics. Included in these courses should be at least three upper division courses in Mechanics, Electricity, Modern Physics or Optics. Besides the above requirements in Physics, the applicant is expected to have at least one Mathematics course beyond the Differential Equations, Advanced Calculus preferred. Students with limited course deficiencies in undergraduate preparation may be admitted with the approval of the Physics faculty but must correct such deficiencies concurrently with their initial graduate courses. Matriculation to candidacy in the Graduate School will be deferred until admission requirements have been successfully accomplished.

## COURSE REQUIREMENTS

### A. Master of Arts in Physics

Candidates for the degree of Master of Arts in Physics will be required to complete successfully 30 graduate credits and pass a comprehensive examination. Included in these 30 credits is a research dissertation for which a maximum of six credits may be allowed.

Physics courses 264 and 265 along with four courses from 268, 269, 260, 261, 278 and 279 will be required of all candidates for this degree.

### B. Master of Science in Physics

Candidates for the degree of Master of Science in Physics will be required to complete 30 graduate credits in approved courses and pass a comprehensive examination. Of these credits 18 to 24 must be in Physics and must include Physics 264 and 265. Six to twelve credits, if approved by the Physics department, may be followed in allied Science or Mathematics courses.

### C. Master of Science — Correlated Programs

Candidates for the Master of Science degree in the program correlated with Education must complete 33 graduate credits and pass comprehensive examinations. Of these 33 credits, 15 will be required in Physics and 18 in graduate education.

# Course Descriptions - Physics

Physics 252. *Mathematical Physics I* *3 credits*
Determinants and Matrices. Fourier Series. La Place Transformations. Introduction to Partial Differential Equations and Boundary Value Problems. Special Functions of Physics including Bessel Functions, Legendre Polynomials, etc.

Physics 253. *Mathematical Physics II* *3 credits*
Functions of a Complex Variable. Infinite Series in the Complex Plane. Theory of Residues. Conformal Mapping. Fourier and La Place Transforms. Advanced Partial Differential Equations. Boundary Value Problems in Physics. Green's Functions.

Physics 260. *Advanced Mechanics I* *3 credits*
Lagrange's and Hamilton's equation for point object. Hamilton's Principle and the Calculus of Variations. Two body central force motion. Linear vector transformations. Kinematics of rigid body motion. Corequisite: Physics 253.

Physics 261. *Advanced Mechanics II* *3 credits*
Rigid body equations of motion. Special Theory of Relativity in the covariant four dimensional notation. Canonical transformations and the Hamilton-Jacobi theory. Theory of small oscillations. Prerequisite: Physics 260.

Physics 264. *Quantum Mechanics I* *3 credits*
Basic postulates of Quantum Mechanics. The Schrodinger Wave Equation. Solution of the Wave Equation in One Dimension. The Harmonic Oscillator. Angular Momentum and Spin. Prerequisite: Physics 253.

Physics 265. *Quantum Mechanics II* *3 credits*
Central Forces. The Hydrogen Atom. Matrix Representations and Transformations. Perturbation Theory. Many Body Problems. Identical Particles. Scattering. Prerequisite: Physics 264.

Physics 268. *Statistical Physics I* *3 credits*
Interpretation of thermodynamics in terms of microscopic phenomena via kinetic theory and the statistics of Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein. The application of both classical and quantum statistics to systems of non-interacting particles. Prerequisite: Physics 253.

Physics 269. *Statistical Physics II* *3 credits*
Statistical mechanics of systems of interacting particles and other special topics. E.g. imperfect gases, liquids, ferromagnets, electrons in solids, transport equations. Prerequisite: Physics 268.

Physics 270. *Solid State Physics I* *3 credits*
The crystal state of matter. Crystal conduction. Lattice energies and vibrations. Elastic constant. Ionic conduction. Properties of metal alloys. Free electron theory of metals. Metallic conduction. Band theory of solids. Conduction in solids. Corequisite: Physics 264.

Physics 271. *Solid State Physics II* *3 credits*
Theory of semiconductors and semiconductor devices. Dielectric and optical properties of solids. Magnetic properties of solids, diamagnetism, paramagnetism, ferro-magnetism. Special topics. Prerequisite: Physics 270.

Physics 274. *Advanced Electronics* *3 credits*
An extension of the basic electronic courses treating additional vacuum tube and transistor circuits and systems such as oscillators and signal generators, various special purpose circuits and basic analog and digital computer circuit operations. Prerequisite: Intermediate course in Electronics.

Physics 276. *Electronic Systems* *3 credits*
Applications of electronic circuitry in physical measurement. Pulse systems in nuclear measurements and in computers; servo-mechanical control system; feed back loops. Prerequisite: Intermediate course in Electronics.

Physics 277. *Electronic Systems* *3 credits*
Vacuum tube and transistor circuits for instrumentation and measurement. Pulse counters; binary and decade scalars; forward and reverse counters. Vacuum tube and other high impedance voltmeter circuits. Integrating circuits; count rate meters. Coincidence circuits; switching circuits; Cathode ray display circuitry. Prerequisite: Intermediate course in Electronics.

Physics 278. *Electromagnetic Theory I* *3 credits*
Electrostatics, Gauss's Law, Poisson and Laplace equations, Boundary value problems. Maxwell's equations. Prerequisite: Physics 253.

Physics 279. *Electromagnetic Theory II* *3 credits*
Radiating systems. Special theory of relativity. Relativistic kinematics. Radiating charges. Special topics. Prerequisite: Physics 278.

Physics 282. *Nuclear Physics I* *3 credits*
The study of nuclear models and force theories. Natural and induced radioactivity. Theory and measurement of alpha, beta, and gamma decay. Theory of the neutrino. Prerequisite: Intermediate course in Modern Physics.

Physics 283. *Nuclear Physics II* *3 Credits*
Nuclear structure, nuclear spin, nuclear magnetic effects. Nuclear reactions with protons, alpha particles, and neutrons; induced radioactivity with neutrons, sources of neutrons, neutron detectors, nuclear fission. Prerequisite: Physics 282.

Physics 290 and 291. *Experimental Methods* *3 credits*
Experiments in optical spectroscopy, infrared spectrophotometry, nuclear magnetic resonance, laser optics, X-Ray diffraction, vacuum evaporation, Mossbauer effect, and beta and gamma ray spectrometry. Each student is expected to perform representative experiments in selected areas listed above and to pursue at least one area in depth in order to make some significant improvements or contributions to techniques. Students will make their own study of references to experimental methods and equipment under guidance and write a comprehensive paper in their work.

Physics 294 or 295. *Selected Topics for Independent Study* *3 credits*

Similar in scope to experimental methods except that student will investigate in depth the theoretical aspects of selected topics in Physics. A comprehensive paper on the topics investigated will be required of the student.

Physics 237.4. *Teaching of Physics* *3 credits*

Use of modern methods and classroom aids in the teaching of Secondary School Physics. Accent on recent developments in the field of Physics. Introduction to some of the research tools used in Physics.

Physics 296 or 297. *Master's Thesis* *Variable*

Based on theoretical or experimental research. Student subject to oral examination by Physics Staff members.

Physics 298 or 299. *Seminar* *1 credit*

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